CHAPTER IV

327 compared with the following annual pre-war figures:

Year	'000 tons
1936	225
1937	241
1938	326
1939	385

4. Iron and Steel Consumption

The limited native iron and steel production, which was never sufficient to keep the consuming industries fully supplied, became an increasing impediment with the rapid development of these industries during the last few years. Iron and steel products had therefore to be imported at the rate of 2/300,000 tons a year. The outbreak of war in Europe, and consequent restriction of supplies meant a falling off of imports, so that an acute shortage developed. During 1942, however, the situation improved somewhat in that Germany was reported to have sent a total of 130,000 tons of iron and steel products to Rumania.

5. German Penetration

327 A small degree of penetration into the Rumanian iron and steel industry has been achieved 439 by the Hermann Göring Werke, which, after the 473 partition of Czechoslovakia, acquired Czech interests in Reşiţa amounting to 6 per cent., which were later increased to 20 per cent.

In 1941 a company with 50 per cent. German and the remainder Rumanian capital, was formed to take over the management of Reşiţa and its associated companies. The Malaxa Works later also came under the organisation of this company.

C. LEAD AND ZINC

1. General

328 In pre-war years Rumania was practically 439 self-sufficient in lead but not in zinc, since she possessed no zinc-smelting facilities. Her production of zinc concentrates was exported, mainly to Poland, part of the metal content being reimported after smelting. Belgium and Poland were her chief suppliers of metallic zinc.

2. Mines and Plant

316 The mining of lead and zinc constituted only a small industry in Rumania. Part of the production, almost 50 per cent. in the case of lead, was obtained incidentally to the working of gold and silver ores. The principal producers were the State-owned mines Baia Sprie, Capnic, Văratec, Valea Roşie, Dealul Crucii, and the Herja mine owned by Phœnix S.A.; all are situated in the Baia Mare district in North Transylvania. The Herja ores averaged approximately 8 per cent. lead and 14 per cent. zinc, whilst ores from the other mines averaged only 4 per cent. lead and 10 per cent. zinc.

135 There are other deposits in the Transylvanian Erzgebirge, where galena and blende are associated with gold occurrences, in the Hunedoara, Banat, and Severin districts, and at Cârlibaba in the Bucovina.

328 Rumania possessed two lead smelters for the treatment of her production of concentrates: the Phœnix plant at Lucaci, with a capacity for about 5,000 tons of crude lead and 3,000 tons of refined lead, and a plant at Feriza belonging to Uzinele Metallurgica din Firiza de Jos. There

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328 was no zinc-smelting capacity until 1940, when the "Sonemin" concern (Societatea Nationala de Explorarii Miniere si Industriale S.A.R.) erected a plant at Copsa Mica with a capacity for 6,000 tons of crude zinc annually. The smelter has three retorts fired by natural gas, treating concentrates first roasted at the Phoenix works.

3. Pre-War Production and Trade

Ore production increased over the years 1934-1938. Statistics available are conflicting, but it is certain that 1938 production in terms of lead content was not less than 7,000 tons. Smelter production also increased from 4,000 tons to about 7,000 tons, and averaged about 5,000 tons over the period. Exports and imports of lead were very small.

Ore production in terms of zinc content varied between approximately 4,000 tons and 8,000 tons. The concentrates were all exported, chiefly to Poland. Metallic zinc was imported almost entirely from Belgium and Poland.

The small output of lead and zinc was of little importance other than to Rumania herself.

4. War-time Development

[728] [439] As practically the whole of the Rumanian lead-zinc industry passed to Hungary when she acquired the Baia Mare district under the Vienna Award, Rumania became largely dependent on imports for the satisfaction of her lead and zinc requirements. However, she retained the Transylvanian Erzgebirge and other areas containing lead-zinc deposits, some of which she is now endeavouring to exploit. For instance, it was reported in December 1942 that deposits in the Banat, near Agadici, and in the Hunedoara district, were being developed. The Copsa Mica zinc smelter has remained in Rumanian hands.

D. MICA

316 135 The Germans are taking considerable interest in the mica deposits discovered in the Mehedinti district, though little is believed to be of high quality. The present annual rate of production is estimated to be about 150 tons.

E. BAUXITE

135 Rumania possessed reserves of bauxite situated in the Bihor Massif and estimated by German experts in 1939 at some 40 million tons. The main deposits are located in the Poiana, Cristi-Repede and Jad Valleys, and in the Galbina valley south-east of Beiuș. Small deposits exist around Remetea and Bratca, in the district around Pietroasa and near Turda.

316 Despite the size of her ore reserves, Rumania's production of bauxite has never been important, largely because of its unsuitability for the Bayer process, which is mostly operated in European alumina plants. Pre-war ouput never exceeded 10,000 tons annually, and was mostly consumed at home in the manufacture of cement and refractory bricks.

Mining operations were carried on before the war by three companies:—

(a) *Bauxita S.A.R.*, a subsidiary of the Swiss Aluminium Industrie A.G. Chippis, which owned mines at Dobrești and produced small quantities of bauxite for the Rumanian cement industry.

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316 (b) *Alumina S.A.R.*, a subsidiary of the German-controlled Bauxit-Trust A.G. of Zurich, which mined bauxite principally at Bratca in the Jad valley, and also owned concessions at Remetea and Pietroasa.

(c) *Aur S.A.R.*, a subsidiary of the Rumanian Mica Group, owning bauxite properties in the Sohodol region near the railway from Abrud to Turda. It supplied bauxite for the manufacture of cement and at the outbreak of war had reserved stocks for a projected alumina and aluminium plant.

The Dobrești mines of the Bauxita S.A.R., which are within the present Rumanian frontiers, are producing at the rate of 10,000 tons annually, most of which is delivered to Germany.

F. ALUMINIUM

● 328 Rumania possessed no aluminium industry before the war although from time to time plans for an alumina-aluminium works were discussed. A few thousand tons of aluminium, [439] mostly in the form of semi-manufactured or finished products, were imported annually, Germany being the principal source of supply.

Aur S.A.R. have been experimenting in the production of alumina in a small pilot plant near Dicio Sân Martin, using the Seailles process which is claimed to be successful in producing alumina from low-grade bauxites of the type mostly found in Rumania.

This company is planning an aluminium reduction works of 20,000 tons capacity with an alumina plant of 60,000 tons. I.G. Farbenindustrie and the Mica group are interested, and the intention is to supply 20,000 tons of alumina annually to Germany. Up to June 1943 these projects had apparently not progressed beyond the experimental stage.

Small tonnages of aluminium, mostly in the form of semi-manufactures, are being imported from Germany, principally for the Rumanian aircraft industry.

G. CHROME

316 Rumania has reserve of chrome ore estimated at [135] 2 million tons, located at Ogradina and Plavișevița on the Danube near Orșova. These deposits were not worked before 1941, and the output for 1942 is estimated at 5,000 tons. The ore is low grade, the highest chrome content being 40 per cent. Cr_2O_3. Germany is believed to be receiving the greater part of present output.

H. MANGANESE

The pre-war annual output of manganese averaged 40,000 tons (40 per cent. Mn.), and the probable maximum output that could be obtained is 60,000 tons. The ore is located in the Eastern and Southern Carpathians with reserves estimated at 10 million tons, while the principal mines are near Jacobeni. About 30/35,000 tons of manganese ore is available for export, and is now mainly supplied to Italy and Germany, the remainder being used locally in the making of ferro-manganese. The Nitrogen company at Dicio sân Martin are reported to have extended their plant to produce ferro-manganese for supply to Reșița iron and steel works, and to Titan Nadrag Calan.

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328 The Rumanian production of argentiferous ores was treated by refineries at Baia Mare and Zlatna and at the Phœnix refinery at Satu Mare, all of which are in the area ceded to Hungary.

2. Pre-War Production

Silver production increased at a much higher rate than gold production over pre-war years; 1937 silver output was nearly double that of 1935, and more than four times as great as that of 1932. However, there was a considerable fall from 824,480 in 1937 to 502,890 troy ounces (metal in ore), in 1938.

3. War-time Developments

328 316 A Rumanian authority has estimated that with the loss of the Baia Mare (Nagybanya) area under the Vienna Award, Rumania was deprived of as much as 87 per cent. of her silver production. Efforts are being made, however, to increase production from the considerable deposits still remaining under Rumanian control. Increased premiums are also being paid on silver mined as from the 1st January, 1943.